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Federal Communications Commission

WASHINGTON, D.C.

In the Matter of	)	
Federal-State Joint Board on	)	CC Docket No. 96-45
Universal Service	)	FCC 96-93
	)	

To: The Commission

COMMENTS OF WAVEPHORE, INC.

WavePhore, Inc. ("WavePhore"), by its attorneys, hereby submits its comments in the above-referenced proceeding. As a leading proponent of high-speed data broadcasting, WavePhore fully supports the preservation and advancement of universal telecommunications services. High-speed data broadcasting serves the goals of universal service. Schools, hospitals, public safety agencies and libraries will be able to use the existing broadcast infrastructure, which covers virtually the entire U.S. population, to transmit high-speed data from one point, a broadcasting facility, to multiple points within the broadcast station's signal. This is a unique and highly efficient way to rapidly distribute large amounts of data. WavePhore urges the Commission to promptly complete a pending rulemaking that will permit broadcasters to implement this data broadcasting technology.[1/] WavePhore also supports the Commission's proposal to adopt technologically and competitively neutral universal service rules that will permit universal service support for data broadcasting technology.

1/ In re Digital Data Transmission Within the Video Portion of Television Broadcast Station Transmission, Notice of Proposed Rulemaking, 10 FCC Rcd 4918, MM Docket No. 95-42 (1995).

Background

WavePhore is a communications research and development company founded in 1990, and has been a pioneer in the development of high-speed data broadcasting equipment and multimedia data compression technology. WavePhore develops technologies that span the entire range of point-to-multipoint data broadcasting techniques, from FM radio statio broadcast band subcarriers, television broadcast Vertical Blanking Interval ("VBI") data systems, to one of WavePhore's primary innovations, the TVT1/4 datacasting system for television broadcasters. When fully deployed, WavePhore's network will transcend many existing geographic and economic barriers by providing a functional nationally deployed network.

The TVT1/4 system consists of three major components. The first is an innovative hardware-based data stream encoder which is installed at the television broadcast station. The television station's transmitter will not require modification or type acceptance and there is no interference to other stations or degradation to the picture received at home. The system inserts the data into the video signal of a television station between the aural and visual carriers of existing transmitters, and thus requires no new spectrum allocation. The encoder transmits digital data within a television station's normal broadcast signal reliably at 300 kbps.

The data is then recovered by the second component of the system, a low cost decoder unit. The WavePhore decoder units are designed to physically connect with all existing computer systems, regardless of age or manufacturer. The decoder unit can be produced in a number of convenient forms driven by the consumer's needs for both price and performance. The data is widely available to anyone with a decoding unit who receives that station's signal.

The third and perhaps most significant component is the WavePhore Network itself. The WavePhore Network utilizes current industry/government standard access methods and

protocols. The network is ubiquitous and transparent to the end users. Data that is transmitted over the network can be individually or group addressable, to any specified level of granularity. Utilizing the existing television broadcast infrastructure, large amounts of data can reach all homes and businesses equipped with personal computers simultaneously with one transmission. Consumers may tailor the highly detailed, data-intensive information to their respective needs. Any user with a decoding unit who receives that station's signal is capable of receiving the applicable data. User data can consist of any data format, including the various government approved encryption and authentication standards. The data distribution methods can be automatically controlled to the extent that data can be dispatched on a dynamically controlled time schedule, capable of message retransmission, auto-update, delay, relay store and forwarded all on demand. The network is fully integrated into the Internet and provides local access and priority override to government authorities in times of emergency.

WavePhore has received grants of experimental authority from the Commission to test its system extensively on several television broadcast stations without receiving a single viewer complaint. WavePhore has been operating its TVT1/4 system for over two years in Arizona and has also conducted operations in Georgia, Oklahoma and Florida. The system has been demonstrated during the 1994 and 1995 NAB Conventions in Las Vegas on KTNV, Channel 13 and will be in operation at the 1996 Convention.

One of WavePhore's TVT1/4 systems is currently deployed for use with Arizona State University's ("ASU") ITFS based distance learning program. This ground-breaking new classroom support program links together many of ASU's satellite campus classrooms within the greater Phoenix metropolitan area. The system provides not only the benefits of a conventional ITFS system, but also a reliable high-speed data service that was previously beyond the reach of

ASU both in geographic and economic terms. University professors at the main campus of ASU use WavePhore technology to transmit printed class lectures notes and student handouts among the geographically separated satellite campus locations, allowing students at the separate campuses full participation in lectures and activities on a real-time basis. Even if cost were not of immediate concern to the project, it would be very difficult, if not impossible, to physically link the system together given the current local telecommunications infrastructure. This same technology can be used to link Arizona's rural and tribal community schools to the ASU system.

WavePhore recently signed an agreement with Intercast, which is associated with Intel Corporation, the world's largest semiconductor company and a leading manufacturer of computer, networking and communications products, to develop data broadcasting technology. Such an agreement will only further the development and expansion of data broadcasting for widespread use.

Data broadcasting can be available immediately because it uses the existing infrastructure of television broadcast stations, and would not require the major upgrades needed in telephone and cable facilities in order to transmit high-speed data. Data broadcasting can reach 98 percent of the population of the United States by simply taking advantage of the nationwide broadcast infrastructure already in place, without imposing any major costs on the industry. Further, the system is able to adapt to any digitally based transmission systems that may be implemented for both television and FM radio statio use.

The potential of data broadcasting to assist with the goals of providing advanced telecommunications service is tremendous. A hospital could immediately send time-sensitive patient records, test results and complex medical images to distant health care facilities. A school could more easily implement distance learning as part of its curriculum, allowing students

to tap into the wealth of educational resources available at libraries and other schools nationwide. Schools that enroll students who speak different languages, such as on an Indian reservation or other bilingual communities, could use data broadcasting technology to provide different students in the same classroom the ability to receive lessons in their respective language. Libraries could be linked nationwide through high-speed data broadcasting so that students, librarians and others could browse through collections of other libraries and participate in activities at other locations. Fire fighters could receive building plans and other life-saving information by using a portable computer and decoder while on the scene of a fire. Blind people equipped with special Braille or audio response terminals could use the technology as an electronic clipping service to provide continuously updated news on topics of their choice from newspaper databases.

The Commission Should Act Promptly To Integrate Data Broadcast Technology With The Current Television Broadcast Service

To expedite the development of the data broadcasting technology, WavePhore sought a declaratory ruling from the Commission on December 9, 1993 to allow broadcasters to use WavePhore technology for data broadcasting without obtaining prior Commission approval. See Letter to Roy Stewart, Chief, Mass Media Bureau, from David Deeds, Chairman, WavePhore, Inc. In that letter, WavePhore attested that its technology causes no visible degradation to the television signal or interference to other stations. The staff issued a Public Notice inviting comments on WavePhore's request. Public Notice, DA 94-67 (January 25, 1994). Over a year later, the Commission released a Notice of Proposed Rulemaking, to determine what if any rules should be established regarding the transmission of "ancillary digital data within the active video

portion of broadcast television NTSC signals." Digital Data Transmission Within the Video Portion of Television Broadcast Station Transmissions, 10 FCC Rcd 4918, at para. 1 (1995). All of the comments and reply comments submitted reflected strong support by broadcasters, manufacturers and data broadcast companies for the deployment of data broadcasting technology, but the Commission has not yet issued any decision in this matter.

If the goal of the Commission is to clear barriers for the use of new technology to help provide greater access to communication services, it needs to expedite its decision making in the data broadcasting NPRM. Data broadcasting is a dynamic technology, and Commission delay can only hinder the improvements that may be made if broadcasters were able to engage in high-speed data broadcasting.

The Definition of Universal Service and Its Support Mechanisms Needs to be Competitively and Technologically Neutral

The Commission seeks comment on whether universal service support for services proposed would be a barrier to entry by new competitors, or would be seen as favoring one technology over another. NPRM at para. 17. While the 1996 Telecommunications Act specifically mentions the provision of all telecommunications services, WavePhore stresses the importance of ensuring that both wireline and wireless technologies are contemplated. Telecommunications services have been associated with deployment in public telecommunications networks by telecommunications carriers. NPRM at para. 9 High-speed data broadcasting technologies, however, provides benefits in both its cost and application that are not currently possible using wireline technologies. Thus, any model of universal service support that the Commission analyzes needs to be technologically and competitively neutral.

Conclusion

For the above reasons, WavePhore urges the Commission to complete its review of the data broadcasting NPRM and adopt a flexible regulatory scheme for advancing universal service.

Respectfully submitted,

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Dated: April 12, 1996

CERTIFICATE OF SERVICE

I, Leslie Anne Byers, a secretary to the law firm of Fisher Wayland Cooper Leader & Zaragoza L.L.P., hereby certify that on this 12th day of April 1996, I served a true copy of the foregoing **"Comments of WavePhore, Inc."** by first class United States Mail, postage prepaid, upon the following:

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